

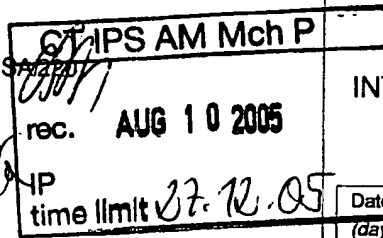
PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

PCT

To:

see form PCT/ISA/220



WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

2011 20057 02667 L10

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/EP2005/050804

International filing date (day/month/year)
25.02.2005

Priority date (day/month/year)
27.02.2004

International Patent Classification (IPC) or both national classification and IPC
F01D5/18

Applicant
SIEMENS INDUSTRIAL TURBOMACHINERY A.B.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☒ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office - P.B. 5813 Patentlaan 2
NL-2280 HV Rijswijk - Pays Bas
Tel. +31 70 340 - 2040 Tx: 31 651 epo nl
Fax: +31 70 340 - 3016

Authorized Officer

Steinhauser, U

Telephone No. +31 70 340-4171



**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/EP2005/050804

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/EP2005/050804

**Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or
Industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	3 7 9-11 20
	No: Claims	1 2 4-6 8 12-19 21-23
Inventive step (IS)	Yes: Claims	
	No: Claims	1-23
Industrial applicability (IA)	Yes: Claims	1-23
	No: Claims	

2. Citations and explanations

see separate sheet

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1 Reference is made to the following documents:

D1: US-B1-6 382 907

D2: SU 779 590

D3: RU-C1-2 042 833

2 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of independent claim 1 is not new in the sense of Article 33(2) PCT.

2.1 Document D1 discloses (the references in parentheses applying to this document) a component defining a blade or a vane of a rotary machine comprising all the technical features of the preamble of said claim (see figs.1-4 and col. 3, l. 44 - col. 4, l. 51). Furthermore it is evident from the disclosure of figs. 3 and 5 in particular that the first and second ribs (13',13",14',14") intersect at intersection joints in the proximity of the trailing edge in such a way that first and second channels form common outlet channels with a flow area.

The same argumentation holds true in view of the disclosure of documents D2 and D3 (see the corresponding passages cited in the search report for each of these documents).

3 Dependent claims 2-23 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step. It is believed that the subject-matter of claims 2,4-6,8,12-19 and 21-23 is explicitly disclosed by the documents D1-D3 according to their indexation in the search report. Additionally the subject-matter of dependent claims 3,7,9-11 and 20 is also known in the state of the art as indicated by the further documents in the search report relating to these claims. An integration of these technical features into a component as claimed in claim 1 does not fulfil the criteria of inventive step as required by Art.33(3) PCT.

- 4 The invention is industrially applicable in the field of gas turbine engines (Art. 33(4) PCT).

Re Item VIII

Certain observations on the international application

- 1 Under Art. 6 PCT the following objections are made against the application:
- 1.1 Independent claim 1 is introduced as a component defining one of a blade and a vane for a rotary machine. It is unclear how a component can be a blade and a vane at the same time. The expression "and" should have been replaced by "or" in order to avoid this unclarity.
- 1.2 In the characterizing portion of claim 1 it is stated that first and second ribs intersect at an intersection joint [...] in such a way that the first channel and the second channel form a common outlet channel. This formulation implies a single intersection joint as well as a single common outlet. This is in contradiction to the figs. 2, 4 and 5 and the respective passages in the description where a plurality of intersection joints (26,26') as well as a plurality of common outlets (27) is disclosed.
- 1.3 Claims 1,6,8,13 and 14 do not only define the component per se but also specify its relationship to further entities which are a rotary machine and a rotor and which do not form part of the subject-matter of the respective claims. Secondly, claims 6,8,13 and 14 attempt to define the subject-matter in terms of the result to be achieved.
- 1.4 Since claim 19 refers to additional first and second ribs as introduced in claims 17 and 18 respectively, claim 19 should have been formulated as being dependent on claims 17 and 18.